



Carlsten named IEEE Fellow

February 11, 2016



The Institute of Electrical and Electronics Engineers (IEEE) has honored Bruce Carlsten of LANL's Accelerator Operations and Technology group with the title of Fellow. IEEE cited him “for contributions to high-brightness electron beams and vacuum electron devices.” Carlsten is a pioneer in the production and use of high-brightness electron beams. His discovery of techniques enabling unprecedented beam brightness has led to a new generation of intense free-electron lasers, including the Lab's Navy Free Electron Laser (FEL), and MaRIE, a proposed premier x-ray FEL facility. These ideas are of such fundamental importance that virtually every free-electron laser in the world uses them.

Carlsten's achievements

Carlsten received a doctorate in electrical engineering from Stanford University and joined the Laboratory in 1982. An accelerator physicist and radio frequency (RF) engineer, he is principal investigator for two Laboratory Directed Research and Development (LDRD) projects and a project for the U.S. Department of State

developing advanced radar technologies. Carlsten has been supporting MaRIE, the Laboratory's flagship experimental facility for the study of Matter-Radiation Interactions in Extremes, as the Work Package Manager for x-ray FEL and electron beam physics since FY13, and leads the development of an integrated numerical modeling tool for MaRIE's conceptual design. Carlsten serves as a U.S. government advisor for various accelerator and RF technology development programs, including as a member of the joint National Science Foundation/Department of Energy High Energy Physics Advisory Panel and the Advisory Board for an Air Force Office of Scientific Research Multidisciplinary Research Initiative on Transformational Electromagnetics. He is a member-at-large of the IEEE Particle Accelerator Science and Technology Technical Committee and the American Physical Society's Executive Committee of the Division of Physics of Beams, and a Fellow of the American Physical Society and Los Alamos National Laboratory. Carlsten has received a U.S. Particle Accelerator School Prize for Achievement in Accelerator Physics and Technology, three Los Alamos Distinguished Performance Awards, and six patents on novel accelerator and RF source technologies. He has more than 100 referred publications and serves on the editorial board of *Physical Review Special Topics – Accelerators and Beams*.

About IEEE

The IEEE is the world's largest professional association advancing innovation and technological excellence for the benefit of humanity. It is designed to serve professionals involved in all aspects of the electrical, electronic, and computing fields and related areas of science and technology that underlie modern civilization. There are more than 430,000 IEEE members in more than 160 countries. The IEEE Grade of Fellow is conferred by the board of directors upon a person with an extraordinary record of accomplishments in any of the IEEE fields of interest. The total number selected in any one year does not exceed one-tenth of one percent of the total voting Institute membership.

Los Alamos National Laboratory

www.lanl.gov

(505) 667-7000

Los Alamos, NM

Operated by Los Alamos National Security, LLC for the Department of Energy's NNSA

